

CLAIMS

What is claimed is:

1. A method for providing efficient state transfer, comprising:
 2. establishing a connection between a mobile node and a first network element, wherein the mobile node has an associated reference state that is updated in response to state changes sent by the mobile node;
 5. establishing a connection between the first network element and a second network element in response to a request from the mobile node;
 7. forwarding messages from the first network element to the mobile node via the second network element;
 9. sending an acknowledgment message from the first network element to the mobile node, wherein the acknowledgment message includes the updated reference state; and
 12. establishing a connection between the mobile node and the second network element, in accordance with the updated reference state.

1. 2. The method of claim 1, wherein the acknowledgment message further comprises a header compression destination option.

1. 2. 3. A method for providing efficient state transfer in a mobile network, comprising:

1. 2. sending a router solicitation message from a mobile node to a next router;

3. 4. sending a router advertisement message from the next router to the mobile node in response to the router solicitation message, wherein the router advertisement message includes a header compression capability option;

6 sending a binding update message from the mobile node to a previous
7 router, wherein the binding update message includes a routing header
8 pointing to the next router and at least one destination option;

9 processing the binding update message in accordance with the routing
10 header and the destination option; and

11 sending a binding acknowledgment message from the previous router
12 to the mobile node, wherein the binding acknowledgment message includes a
13 routing header pointing to the next router.

1 4. A system for providing efficient state transfer, comprising:

2 means for establishing a connection between a mobile node and a first
3 network element, wherein the mobile node has an associated reference state
4 that is updated in response to state changes sent by the mobile node;

5 means for establishing a connection between the first network element
6 and a second network element in response to a request from the mobile node;

7 means for forwarding messages from the first network element to the
8 mobile node via the second network element;

9 means for sending an acknowledgment message from the first network
10 element to the mobile node, wherein the acknowledgment message includes
11 the updated reference state; and

12 means for establishing a connection between the mobile node and the
13 second network element, in accordance with the updated reference state.

1 5. The method of claim 4, wherein the acknowledgment message
2 further comprises a header compression destination option.

1 6. A system for providing efficient state transfer in a mobile
2 network, comprising:

1 means for sending a router solicitation message from a mobile node to
2 a next router;

3 means for sending a router advertisement message from the next
4 router to the mobile node in response to the router solicitation message,
5 wherein the router advertisement message includes a header compression
6 capability option;

7 means for sending a binding update message from the mobile node to
8 a previous router, wherein the binding update message includes a routing
9 header pointing to the next router and at least one destination option;

10 means for processing the binding update message in accordance with
11 the routing header and the destination option; and

12 means for sending a binding acknowledgment message from the
13 previous router to the mobile node, wherein the binding acknowledgment
14 message includes a routing header pointing to the next router.

1 7. A computer program product comprising a computer usable
2 medium having computer readable code embodied thereon for providing
3 efficient state transfer, the computer program product comprising:

4 computer readable program code devices for establishing a connection
5 between a mobile node and a first network element, wherein the mobile node
6 has an associated reference state that is updated in response to state
7 changes sent by the mobile node;

8 computer readable program code devices for establishing a connection
9 between the first network element and a second network element in response
10 to a request from the mobile node;

11 computer readable program code devices for forwarding messages
12 from the first network element to the mobile node via the second network
13 element;

14 computer readable program code devices for sending an
15 acknowledgment message from the first network element to the mobile node,
16 wherein the acknowledgment message includes the updated reference state;
17 and

18 computer readable program code devices for establishing a connection
19 between the mobile node and the second network element, in accordance
20 with the updated reference state.

1 8. The computer program product of claim 7, wherein the
2 acknowledgment message further comprises a header compression
3 destination option.

1 9. A computer program product comprising a computer usable
2 medium having computer readable code embodied thereon for providing
3 efficient state transfer, the computer program product comprising:

1 computer readable program code devices for sending a router
2 solicitation message from a mobile node to a next router;

3 computer readable program code devices for sending a router
4 advertisement message from the next router to the mobile node in response
5 to the router solicitation message, wherein the router advertisement message
6 includes a header compression capability option;

7 computer readable program code devices for sending a binding update
8 message from the mobile node to a previous router, wherein the binding
9 update message includes a routing header pointing to the next router and at
10 least one destination option;

11 computer readable program code devices for processing the binding
12 update message in accordance with the routing header and the destination
13 option; and

14 computer readable program code devices for sending a binding
15 acknowledgment message from the previous router to the mobile node,
16 wherein the binding acknowledgment message includes a routing header
17 pointing to the next router.

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